

Ser. No.10/552,834
Amdt. dated January 30, 2008
Reply to Office action of October 31, 2007
Customer No. 24498

PF030058

Remarks/Arguments

Claims 1 and 3-9 have been amended. Claim 2 has been cancelled. Support for these amendments can be found on page 4, lines 6 through 11, of the specification.

Allowable Subject Matter

Examiner objected to claims 2, 6, and 7 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The limitations of now canceled claim 2 have been added to its parent, the currently amended claim 1. It is therefore believed that claim 1 is now allowable. Furthermore, amended claims 3-7, are also believed to be allowable as they depend on the presently amended claim 1.

35 U.S.C. §102

Claims 1 and 3-5 stand rejected under 35 U.S.C. §102(b) as being anticipated by Marino (U.S. Patent No. 6,043,785).

The present claimed invention, in one embodiment, provides an antenna system that comprises on a same substrate, a first transmission antenna, and second and third reception antennas. The first to third antennas are slots which are excited by longitudinal radiation and are placed on a same edge of the same substrate. The first antenna is placed between the second and third antennas. The first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas. The radiating extremity of the first antenna is located in the radiating zones of the second and third antennas. Amended claim 1 contains features similar to those discussed above.

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It is submitted that Marino neither teaches nor discusses an antenna system where the "first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas" and with the "radiating extremity of the first antenna being located in the radiating zones of the second and third antennas."

Marino discloses a "fixed radius tapered slot antenna formed [by] a dielectric substrate with an electrically conductive layer on one side. The slot is defined by two hemispherical shaped elements. A common base is also formed on the conductive layer behind the hemispherical shaped members. Preferably, a microstrip feedline is formed on the side of the dielectric substrate to electromagnetically couple to the balun adjacent the narrow end of the tapered slot. A contiguous array of fixed radius tapered slot antennas can be made on the same conductive layer of a dielectric layer." (Abstract) The Office Action asserts that Marino discloses "an antenna system comprising a tapered slot antenna array having a slot antenna disposed between two slot antennas, a notch 17 placed between two slot antennas, wherein the slots are excited by microstrip feed line 26, and wherein the slot antennas are placed on the same edge of a substrate 10."

Marino does not describe a system wherein "the first antenna is placed between the second and third antennas" and "is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas," where the "radiating extremity of the first antenna is located in the radiating zones of the second and third antennas," as described in amended claim 1 and its dependent claims 3-5. Marino describes an antenna array comprising "a number of fixed-radius tapered slot antennas contiguously formed in a narrow strip of dielectric substrate 10." (Col. 4, Lines 9-11)

Therefore, it is respectfully submitted that Marino does not disclose or suggest a system wherein "the first antenna is placed between the second and third antennas" and "is offset with respect to the second and third antennas such that the radiating extremity of the first antenna

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extends beyond the radiating extremities of the second and third antennas," where the "radiating extremity of the first antenna is located in the radiating zones of the second and third antennas" as recited in the amended claim 1 of the present invention.

In view of the above remarks and amendments to the claims, it is respectfully submitted that there is no 35 USC 112 enabling disclosure provided by Marino that makes the present invention as claimed in claim 1 unpatentable. As claims 3-7 are dependent on claim 1, it is respectfully submitted that claims 3-7 are allowable for the same reasons as discussed above in regard to claim 1. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

35 U.S.C. §103

Claims 8-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sanad (US Patent 5,657,028) in view of Marino.

The present claimed invention, in one embodiment, provides a PCMCIA standard interface card comprising an antenna system that comprises on a same substrate a first transmission antenna and second and third reception antennas. The first to third antennas are slots which are excited by longitudinal radiation and are placed on a same edge of the same substrate. The first antenna is placed between the second and third antennas and is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas. The radiating extremity of the first antenna is located in the radiating zones of the second and third antennas. Amended claim 8 contains features similar to those discussed above.

Sanad discloses "a partially shorted, dual C-patch antenna ... comprised of a truncated ground plane (22), a layer of dielectric material (28) having a first surface overlying the ground plane and an opposing second surface, and an electrically conductive layer (30) overlying the second opposing surface of the dielectric layer. The electrically conductive layer forms a radiating patch and has a rectangularly shaped aperture having a length that extends along a

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first edge of the electrically conductive layer and a width that extends towards an oppositely disposed second edge. The length has a value that is equal to approximately 20% to approximately 3m according to claim 1, wherein the slots are excited by feed lines constituted by microstrip lines." (Sanad Abstract) The Office Action asserts that Sanad discloses "a PCMCIA card comprising a slot antenna formed on a substrate."

The Office Action admits that Sanad does not disclose the antenna having a first slot antenna placed between the second and third slot antennas." Furthermore, Sanad does not describe "a PCMCIA standard interface card comprising an antenna system ... wherein the first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas, the radiating extremity of the first antenna being located in the radiating zones of the second and third antennas." Sanad describes instead a double C-patch antenna.

Therefore, it is respectfully submitted that Sanad does not disclose or suggest "a PCMCIA standard interface card comprising an antenna system ... wherein the first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas, the radiating extremity of the first antenna being located in the radiating zones of the second and third antennas," as recited in the amended claim 8 of the present invention.

The Office Action asserts that Marino discloses "an antenna system comprising the first slot antenna placed between the second and third slot antennas, and wherein the slot antennas are formed on the same edge of a substrate."

Marino discloses a "fixed radius tapered slot antenna formed [by] a dielectric substrate with an electrically conductive layer on one side. The slot is defined by two hemispherical shaped elements. A common base is also formed on the conductive layer behind the hemispherical shaped members. Preferably, a microstrip feedline is formed on the side of the dielectric substrate to electromagnetically couple to the balun adjacent the narrow end of the

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tapered slot. A contiguous array of fixed radius tapered slot antennas can be made on the same conductive layer of a dielectric layer." (Marino Abstract)

Marino does not describe "a PCMCIA standard interface card comprising an antenna system... wherein the first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas, the radiating extremity of the first antenna being located in the radiating zones of the second and third antennas." Marino describes an antenna array comprising "a number of fixed-radius tapered slot antennas contiguously formed in a narrow strip of dielectric substrate 10." (Marino Col. 4, Lines 9-11)

Therefore, it is respectfully submitted that Marino does not disclose or suggest "a PCMCIA standard interface card comprising an antenna system... wherein the first antenna is offset with respect to the second and third antennas such that the radiating extremity of the first antenna extends beyond the radiating extremities of the second and third antennas, the radiating extremity of the first antenna being located in the radiating zones of the second and third antennas," as recited in the amended claim 8 of the present invention.

In view of the above remarks and amendments to the claims, it is respectfully submitted that there is no 35 USC 112 enabling disclosure provided by Sanad or Marino when taken alone or in combination that makes the present invention as claimed in claim 8 unpatentable. As claim 9 is dependent on claim 8, it is respectfully submitted that claim 9 is allowable for the same reasons as discussed above in regard to claim 8. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact

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the applicant's representative at (609) 734-6804, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account 07-0832.

Respectfully submitted,

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